

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001757410018-7

~~tion of the design of the thermostat. The article includes a detailed description of the circuit of the~~

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CIA-RDP86-00513R001757410018-7"

TULIN, V.A.; SAVCHENKO, A.A.

Field thermometer for a GAI gravimeter. Trudy Inst. fiz. Zem. no.31:
(MIRA 17:9)
68-76 '64.

TULIN, V.A.

Semiautomatic apparatus for testing contact thermometers. Trudy Inst.
fiz. Zem. no. 31:83-88 '64.

Some characteristics of checking the performance of quartz clocks on
expeditions. Ibid.:89-93. (MIRA 17:9)

TULIN, V.A.

Thermostat with continuous regulation. Izv.AN SSSR.Ser.geofiz.
no.10:1499-1503 O '60. (MIRA 13:9)

1. Akademiya nauk SSSR, Institut fiziki Zemli.
(Thermostat)

Tulin, V. A.

S/006/60/000/008/001/001
B012/B051

AUTHOR: None given

TITLE: Chronicle

PERIODICAL: Geodeziya i kartografiya, 1960, No. 8, pp. 72-77

TEXT: From May 10-14, 1960 the shestoye Mezhdunovodstvennoye soveshchaniye po gravimetrii (Sixth Interdepartmental Conference on Gravimetry) was held in Moscow. It was convened by the geodezicheskaya sektsiya Komiteta geodezii i geofiziki Akademii nauk SSSR (Section for Geodesy of the Committee of Geodesy and Geophysics of the Academy of Sciences USSR) and the Aerogravimetriceskaya laboratoriya Instituta fiziki Zemli AN SSSR (Laboratory for Aerogravimetry of the Institute of Physics of the Earth of the AS USSR). 216 representatives of 64 organizations took part in this conference: production organizations, research centers, testing and construction organizations, educational institutions, and organizations of the Akademiya nauk SSSR (Academy of Sciences USSR), Sibirskoye otdeleniye AN SSSR (Siberian Department of the

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Chronicle

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AS USSR), Akademii nauk Ukrainskoy, Gruzinskoy, Litovskoy i Azerbaydzhanskoy SSR (Academies of Sciences of the Ukrainskaya, Gruzinskaya, Litovskaya, and Azerbaydzhanskaya SSR), Ministerstvo vyshego i srednego spetsial'nogo obrazovaniya SSSR (Ministry of Higher and Secondary Special Education of the USSR), Ministerstvo geologii i okhrany nedor SSSR (Ministry of Geology and Preservation of Mineral Resources), Komitet standartov, mer i izmeritel'nykh priborov pri Sovete Ministrov SSSR (Committee on Standards, Measures, and Measuring Instruments of the Council of Ministers USSR), NII VTS, Gosudarstvennyy Komitet Soveta Ministrov SSSR po avtomatizatsii i mashinostroyeniyu (State Committee on Automation and Machine Construction of the Council of Ministers USSR), as well as representatives of the factories of the Moskovskiy sovnarkhoz (Moscow Sovnarkhoz) and the Leningradskiy sovnarkhoz (Leningrad Sovnarkhoz) that produce gravimetric apparatus. 70 lectures were held. I. D. Zhongolovich (Institut teoreticheskoy astronomii AN SSSR (Institute of Theoretical Astronomy of the AS USSR) spoke about the "Experience With Determining Some Parameters of the Gravitational Field of the Earth From Observations of the Second and Gravitational Field of the Earth".

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Third Artificial Satellites". B. M. Yanovskiy (VNIIM) spoke about "The Determination of the Absolute Value of Gravitational Acceleration of the Point of VNIIM in Leningrad". M. Ye. Kheyfets spoke about the "High-precision Pendulum Apparatus of the TsNIIGAiK", V. A. Tulin about "Portable Quartz Clocks", L. A. Gerenburg about "Questions of Time Recording in Pendulum Measurements", G. M. Mininzon, T. M. Ayrapetyan, and M. S. Davydov about the "Portable Gravimeter-altimeter ГЕЛ-1" (GVP-1), K. Ye. Veselov about the "Design of a High-precision Gravimeter", Yu. D. Bulanzhe (IFZ AN SSSR (IFZ AS USSR)) about "The Main Working Directions in the Field of Determining Gravitational Acceleration on the Sea", V. A. Romanyuk about "The Theory of Determining Gravitational Acceleration on the Sea by Means of Gravimeters", A. M. Lozinskij about "String Sea Gravimeters". M. S. Molodenskiy (TsNIIGAiK) investigated in his lecture tolerable errors already published in reports or submitted for publication by some authors. Among these are papers by I. F. Monin (L'vovskiy politekhnicheskiy institut (L'vov Polytechnic Institute)), A. K. Malovichko (Permskiy Gosudarstvennyy universitet (Perm' State University)), and S. V. Gromov (Leningradskiy Gosudarstvennyy universitet).

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(Leningrad State University). L. A. Govorova spoke about "The Errors of Interpolation of Gravity Anomalies and the Accuracy of Determining Gravimetric Deflections of the Vertical", B. A. Bryusov (MGU) about "Errors of the Representation and Interpolation of Gravitational Anomalies". S. N. Shcheglov reported on "Preliminary Results of Geodetic and Gravimetric Work in the Antarctica", Yu. N. Avsyuk on the "Structure of the Earth Crust in the Antarctica According to Seismo-gravitational Data", S. A. Ushakov on "The Structure of the Earth Crust in the Antarctica According to Gravimetric Data". P. S. Zakatov (MIIGAiK) spoke about the "Preparation and Use of Gravimetric Experts". The recommendations given by the Conference are mentioned. From April 19 to 22, 1960 a Scientific and Technical Conference of the Workers of the Topographic-geodetic and the Surveying Service of the Glavnaya Upravleniya geologii i okhrany nedr pri Sovete Ministrov Ukrainskoy SSR (Main Administration of Geology and Preservation of Mineral Resources of the Council of Ministers Ukrainskaya SSR) was held in Artemovsk. There, the state of the topographic-geodetic and surveying work in the organizations of the Glavgeologiia USSR (Glavgeologiia UkrSSR) and the introduction of new

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techniques and technology in production were discussed. At the Conference it was stated that the extent of the work mentioned will be considerably increased within the next seven years. Furthermore, the following drawbacks were pointed out: The methods applied are too extensive and expensive, the geological organizations are insufficiently equipped with new apparatus; in geological observations the aero-photographs and topographic plans available on a large scale are not sufficiently used. This state is explained by inefficient technical direction, inefficient technical and material supply, by a lack of suitable direction in the Glavgeologiya UkrSSR and the Ministerstvo geologii i okhrany nedor SSSR (Ministry of Geology and Preservation of Mineral Resources of the USSR). Recommendations are given to improve this situation. For improving the qualifications of the workers the Conference suggested to convene scientific and technical conferences at regular intervals. For improving information and for the exchange of experience the editorial board of the present periodical was asked to furnish a section for topographic and geodetic work in geological observations. The participants in the Conference appealed to the workers

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of the topomarksheyderskaya sluzhba Glavgeologii USSR (Topographic and Surveying Service of the Glavgeologiya UkrSSR) to do everything possible in order to carry out the resolutions of the 21st Party Congress of the CPSU and the Plenum of the Central Committee of the CPSU in June. ✓

Card 6/6

TULIN, V.A.

The GAE-4 gravimeter. Trudy Inst. fiz. Zem no. 29:85-93 '63.

Effect of the external temperature on the elastic system of
a GAE-3 gravimeter. Ibid.:94-101

Analysis of two circuits for measuring slight temperature
changes. Ibid.:102-111

Comparative evaluation of thermostats with different
principles of action. Ibid.:112-121

Instrumental and field precision of a quartz gravimeter
with horizontal torsion suspension. Ibid.:122-133

TULIN, V.A.

Practice of making a precise field thermostat using mercury
contact thermometers. Izv.AN SSSR.Ser.geofiz. no.8:1056-1059
Ag '62. (MIRA 15:8)

1. Institut fiziki Zemli AN SSSR.
(Thermostat)

TULIN, V.A.

Method for reducing the error arising in the coincidence of mirrors
in a GAE gravimeter. Trudy Inst.fiz.Zem. no.24:80-85 '62.
(MIRA 15:7)

(Gravimetry)

L 32563-66 EWT(1)/EWP(e)/EWT(m)/EEC(k)-2/EWP(h)/EWA(h) GW/WH
ACC NR: AR5014703 SOURCE CODE: UR/0270/65/000/006/0030/0031

19
B

AUTHOR: Bulanzhe, Yu.D.; Popov, Ye.I.; Tulin, V.A.

ORG: none

TITLE: Automatic processing of gravimetric observations

SOURCE: Ref. zh. Geodeziya. Otdel'nyy vypusk, Abs. 6.52.194

REF SOURCE: Sb. Vychisl. tekhn. v upravlenii. M., Nauka, 1964, 212-215

TOPIC TAGS: gravimetry, gravimeter, gravimetric analysis, aerial survey, data processing

TRANSLATION: The Aerogravimetric Laboratory of the Institute of the Physics of the Earth of the SSSR Academy of Sciences has developed a strongly damped gravimeter, based on the elastic properties of twisted quartz glass¹/thread.² The measurement of the force of gravity acceleration is made by the variation of the thread angle of twist. It is determined by the deflection angle of the pendulum. The instrument is used in naval gravimetry survey on submarines and surface ships, as well as for experimental work on aircraft. The time spent for processing of recordings, during which the effect of turbulent accelerations is excluded, significantly exceeded the time of observation. The special features and the conditions for automatic processing

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ACC NR: AR5014703

of gravimetric data were studied. By observation from low-speed submarine or surface vessels, the automatic computer has only to perform the operation of averaging the record for a given period of time. In observation from an airplane the functions of the computer are more complex. Computing slipping average values of gravimeter indications or the current values of integral from the function, which represents the motion of elastic system pendulum in time, can be considered as a preliminary problem in this case. The device transforming the movement of the gravimeter pendulum into an analogy or code system must have an accuracy of 2'.5. The most comprehensive way of taking readings is the method in which the measurement unit of the pendulum swing is the change of the distance between two blocks, reflected from the elastic system speculum. Other known methods (for example the volume one) will hardly secure the necessary accuracy. B.U.

SUB CODE: 09, 08

Card 2/2 J.C.

TULIN, V.A.

Potential functions of a thermostat with relay control. Trudy
Inst.fiz.Zem. no.24:45-58 '62. (MIRA 15:7)
(Thermostat)

TULIN, V.A.

Temperature measurement inside a thermostat. Trudy Inst.fiz.
Zem. no.24:28-35 '62. (MIRA 15:7)
(Temperature—Measurement) (Thermostat)

TULIN, V.A.

Increasing the sensitivity of a resistance thermometer. Trudy
Inst.fiz.Zem. no.24:36-44 '62. (MIRA 15;7)
(Thermometers)

TULIN, V.A.

Thermostat with continuous control and an independent pickup.
Trudy Inst.fiz.Zem. no.24:59-67 '62. (MIRA 15:7)
(Thermostat)

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TULIN, V.A.

Experimental study of a thermostat with continuous control,
Trudy Inst.fiz.Zem. no.24:68-79 '62. (MIRA 15:7)
(Thermostat)

PHASE I BOOK EXPLOITATION SOV/3681

TuLin, V.A.
P.2

Akademiya nauk SSSR. Institut fiziki zemli

Voprosy instrumental'noy gravimetrii; [sbornik] (Problems of
Instrument Gravimetry; Collection of Articles) Moscow,
Izd-vo AN SSSR, 1959. 76 p. (Series: Its: Trudy, No. 8/175/)
Errata slip inserted. 1,500 copies printed.

Ed.: Yu. D. Bulanzhe, Doctor of Physical and Mathematical Sciences;
Ed. of Publishing House: V.G. Bergaut; Tech. Ed.: Yu.V.
Rylina.

PURPOSE: This publication is intended for geophysicists, physicists,
hydrographers, geodesists, and navigators.

COVERAGE: This is a collection of eight articles dealing with gravi-
metric instruments used in oceanographic investigations. De-
scriptions of the instruments and data on test results are given.
No personalities are mentioned. References appear at the end of
some of the articles.

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Problems of Instrument Gravimetry (Cont.)

SOV/3681

TABLE OF CONTENTS:

Aleksandrov, Se.Ye., V.U. Sukhodol'skiy, and Yu.P. Izmaylov.
New Pendulum Instrument for Determining the Gravitational
Force on the Ocean

The article gives a description of the MShP (Marine Pendulum
Instrument) developed by the Institut fiziki zemli AN SSSR
(Institute of Terrestrial Physics, Academy of Sciences USSR).
The instrument has six quartz pendulums distributed in groups
of three on two parallel planes and is also equipped with a set
of special pendulums for measuring incline and acceleration.
Technical characteristics of the instrument and data on test re-
sults are given.

Tulin, V.A., Quartz Clock for Pendulum Measurements of Gravitational
Force on the Ocean 25

The article gives a description of a portable quartz clock
used for gravimetric pendulum measurements. Methods of
utilizing separate units and the operation of the instru-
ment as a whole are described. Rate curves for clock under

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Problems of Instrument Gravimetry (Cont.)

SOV/3681

laboratory and actual conditions are presented.

Popov, Ye.I. Quartz Gravimeter for Observations on the Ocean. 32
A description is given of a quartz gravimeter of new
design with photographic recording of the readings.
Strong damping of its elastic systems makes observations
possible while moving if the instrument is installed in a
gimbal.

Sukhodol'skiy, V.V. Instrument RNU for Recording incline and
Acceleration in Gravimetric Determinations on the Ocean 42
In addition to the recording of incline and acceleration,
the instrument makes galvanometric recording of vibrations
which are converted into electrical oscillations by means
of suitable transmitters. Data obtained during expeditions
to determine the nature of vibrations, inclines and accelera-
tions acting on the decks of a diesel-electric ship and the
expedition vessel "Mikhail Lomonosov" are presented.

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TULIN, V.A.

Quartz clock for pendulum determinations of gravity at sea. Trudy
Inst. fiz. zem. no.8:25-31 '59 (MIRA 13:3)
(Clocks and watches)

40016

8/035/62/000/008/077/090
A001/A101

9,6160

AUTHOR:

Tulin, V. A.TITLE: A method for reducing the error in superposing the mirrors of the
ГАЭ (GAE) gravimeterPERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 8, 1962, 25,
abstract 8G214 ("Tr. In-ta fiz. Zemli AN SSSR", 1962, no. 24,
80 - 85)TEXT: The Institute of Physics of the Earth, AS USSR, has designed and con-
structed the working model of a photoelectronic attachment in order to increase
the accuracy of reading g_r on GAE gravimeters. This attachment makes it possible
to determine the superposition of blinks from the mobile and fixed mirrors of the
elastic system on the galvanometer scale with an error of ~ 0.1 . To weaken the
effect of pendulum vibrations in the elastic system, an integrating circuit is
provided in the galvanometer circuit, which causes electric damping of the gal-
vanometer pointer. The photoelectronic attachment is described, and test results
under laboratory conditions are presented. In the range of 1,000 mgal the read-
X

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A method for reducing the...

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A001/A101 X

ing error g_r turned out to be within ± 0.03 mgal. The proposed method of recording can be applied in any gravimeter in which reading is made by means of a mobile and a fixed mirror.

P. Shokin

[Abstracter's note: Complete translation]

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TULIN, V.A.

Technique of number - pulse coding of gravimeter signals.
Izv. AN SSSR. Fiz. zem. no.12:56-61 '65. (MIRA 19:1)

1. Institut fiziki Zemli AN SSSR. Submitted April 4, 1964.

BOROVIK-ROMANOV, A.S.; TULIN, V.A.

Mixed electron-nuclear resonance in the antiferromagnet
MnO₃. Pis'. v red. Zhur. eksper. i teor. fiz. 1 no.5:18-22
Je '65. (MIRA 18:11)

1. Institut fizicheskikh problem imeni Vavilova AN SSSR.
Submitted April 22, 1965.

L 14495-66
ACC NR: AT6006258

EWT(1)/EWP(e)/EWT(m)/EWP(b) GS/GH/WH
SOURCE CODE: UR/0000/65/000/000/0003/0017

AUTHOR: Popov, Ye. I.; Tulin, V. A.

ORG: none

TITLE: A marine gravimeter with photoelectric micrometer

SOURCE: AN SSSR. Institut fiziki Zemli. Apparatura i metody morskikh gravimetricheskikh nablyudeniy (Apparatus and methods of marine gravimetric observations). Moscow, Izd-vo Nauka, 1965, 3-17

TOPIC TAGS: gravimeter, oceanic gravimeter, photoelectric micrometer

ABSTRACT: The authors describe the first model of an instrument they have developed for measuring gravity acceleration from a floating ship. The instrument is a quartz gravimeter with liquid temperature compensation and a spring system based on the elastic properties of twisted filaments. This system (the sensor for changes in gravity acceleration) consists of a quartz frame to which a quartz thread about 100 μ in diameter is fastened. A pendulum and mirror arrangement is welded to the middle of the thread. The moment created by the pendulum twists the thread through an angle of 300-500°. The spring system is housed in a square dura-

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ACC NR: AT6006258

lumin box which contains blocks made of this same material: one with the quartz system and the other with a stationary mirror. Each block is mounted on the bottom of the box on three screws and is held to the bottom by a pair of springs. The screws are used for controlling the position of the blocks with respect to the housing. The top of the box is hermetically sealed with a cover containing a plane-parallel protective glass over the mirrors. Four screws projecting from this cover are used for fastening the framework of the optical system. Cylindrical plugs along the edges of the cover allow access to the adjustment screws. The range of the spring system is adjusted by one of these screws. The housing is filled with a viscous silicone liquid, which acts as a damper for natural oscillations of the pendulum and for vibrations caused by disturbing tilts and acceleration and also compensates for variations in the position of the pendulum caused by changes in the temperature of the system. A diagram of the instrument is shown in Fig. 1. An optical system with a photoelectric micrometer is used for measuring the angle between the mirrors. The galvanometer in the photomultiplier circuit is adjusted so that it gives a zero reading when the bright spot is completely covered by screen 7 and a full-scale reading when the bright spot is completely uncovered. Thus, the visible width of the spot is magnified to the dimensions of the galvanometer scale.

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ACC NR: AT6006258

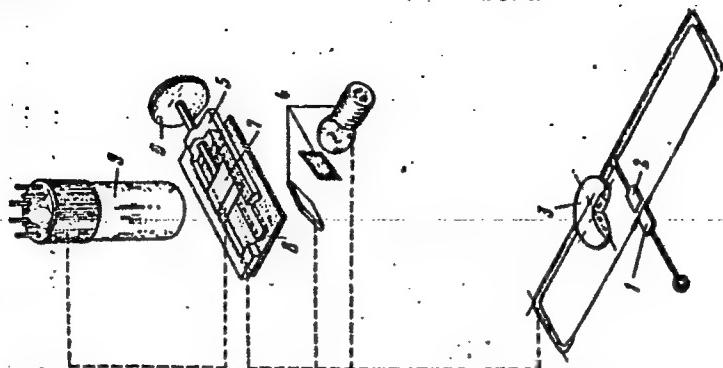


Fig. 1. Schematic diagram of the gravimeter with photoelectric micrometer: 1--movable mirror in the spring system; 2--stationary mirror rigidly fastened to the frame; 3--lens; 4--lamp with iris and mirror; 5--base of the photoelectric micrometer; 6--micrometer screw with reading device; 7--cover screen; 8--spot baffle; 9--photomultiplier.

The rectangular images from mirrors 1 and 2 are reflected onto screen 7 in the form of rectangles δ_H and δ_M (see Fig. 2). The micrometer screw measures the distance

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ACC NR: AT6006258

m between the centers of these images in millimeters, which is then converted to ang-

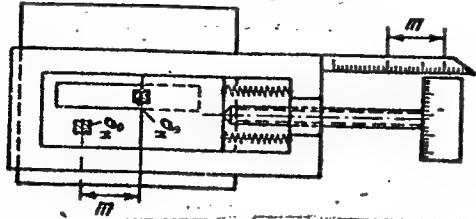


Fig. 2. Schematic diagram of the photoelectric micrometer

ular measure of milligals. A schematic diagram for the electrical circuit of the photoelectric micrometer is given. Orig. art. has: 8 figures and 8 formulas.

[14]

SUB CODE: 08, 09/ SUBM DATE: 29Oct65/ ORIG REF: 003/ ATD PRESS: 4/98

BC
Card: 6/4

ACC NR: AT7006525

(N)

SOURCE CODE: UR/0000/66/000/000/0079/0097

AUTHOR: Bashilov, I. P.; Konovalov, V. A.; Tulin, V. A.

ORG: None

TITLE: Computer for a marine gravimeter with an optical-mechanical converter

SOURCE: AN SSSR. Institut fiziki Zemli. Pribory dlya opredeleniya sily tyazhesti na more i ikh issledovaniye (Instruments for determining the force of gravity at sea and their analysis). Moscow, Izd-vo Nauka, 1966, 79-97

TOPIC TAGS: gravimeter, marine equipment, ~~vacuum tube~~, gravity, gravimeter, gravitation, gravitati~~on~~, gravitation field, ~~math science instrument~~, ~~compu-~~ ~~gravimetric~~ ~~ent~~, adder, electronic computer, special purpose computer, solid state computer, computer application, ~~vacuum tube~~

ABSTRACT: The vacuum tube computer developed by the Division of Experimental Gravimetry of the Institute of Physics of the Earth, AN USSR, for summing a predetermined number of ordinates, to be used with the marine gravimeter could only be used for laboratory investigations because its power requirements were too high for most field applications. The Division and the Institute's Electronic Automation Laboratory therefore joined forces to develop a semiconductor version of the same device, leaving the circuitry unchanged. The device has the following basic

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ACC NR: AT7006525

characteristics: (1) summation time: 0.1-0.9 second, by 0.1 second; 1.0-9 seconds, by 1 second; 10-90 seconds, by 10 seconds; 100-900 seconds, by 100 seconds. Summation time is set manually before the first measurement; (2) adder capacity 10^8 pulses; (3) measuring frequency 100 kc; (4) measurement error of time interval not over $\pm 10^{-5}$ seconds; (5) information output: light display in binary decimal code, as well as to magnetic tape in parallel 13-bit binary code for subsequent checking of averaging results using computers; (6) beginning of reading set by operator manually; (7) power supply from 12 volt battery. Functional block diagrams and schematic diagrams of the device are presented, and the operation of the device is described in detail.
Orig. art. has: 6 figures and 1 table.

[WA N-67-3]

SUB CODE: 08 / SUBM DATE: None / ORIG REF: 004

[29]

Card 2/2

ACC NR: AT7006528

(N)

SOURCE CODE: UR/0000/66/000/000/0145/0159

AUTHOR: Tulin, V. A.

ORG: None

TITLE: Installation for quartz resonator research

SOURCE: AN SSSR. Institut fiziki Zemli. Pribory dlya opredeleniya sily tyazhesti na more i ikh issledovaniye (Instruments for determining the force of gravity at sea and their analysis). Moscow, Izd-vo Nauka, 1966, 145-159

TOPIC TAGS: gravimeter, marine equipment, ~~envelope~~, ~~frequency~~, ~~accuracy~~, ~~temperature~~, gravimetry, ~~gravimeter~~, ~~geostationary effect~~, ~~gravimeter effect~~, ~~environment~~, ~~geodesy~~, ~~instrument~~, resonator, resonator Q factor, temperature coefficient, ~~thermostat~~, ~~quartz resonator~~

ABSTRACT: Quartz resonators are widely used as timers for pendulum gravimetry observations. Since resonators must be maintained at a constant temperature in order to maintain the required accuracy, the curve of change in the temperature frequency coefficient is an extremely important parameter for stable resonator operation. A device for simultaneous testing of four resonators is described. It can be used to record temperature coefficient curves within temperature ranges between room temperature and 85°C for four resonators simultaneously. The minimum step in temperature change is approximately 0.1°C but any greater step is possible. This device

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ACC NR: AT7006528

can also be used to age resonators and to determine the rate of variation in resonator frequency. The device consists of a thermostat containing the resonators and the oscillator circuit elements which require constant temperatures. The various elements of the device are described in detail. Orig. art. has: 5 figures and 1 table.

[WA N-67-3]
[29]

SUB CODE: 08/SUBM DATE: None/ORIG REF: 001

Card 2/2

KAPLAN, A.Yu.; KARAPETYAN, G.B.; TASKIMBAYEV, Ye.T.; TULIN, V.K.;
SOSNOV, G.Ye.

Comments on G.V.Molchanov's article "Trends in the efficient
construction of units for underground repair of wells" ("Nef-
tianoe Khoziaistvo" No.1, 1962.) Neft. khoz. 40 no.7:53-55
Jl '62. (MIRA 17:3)

1. Ob'yedineniye kazakhstanskoy neftyanoy promyshlennosti
(for all except Sosnov). 2. Leninneft' (for Sosnov).

AM5002725

BOCK EXPLOITATION

UR/

Kablukov, A. D.; Sochovanov, N. N.; Baranov, E. N.; Bogolyubov, A. N.; Vertopova,
G. I.; Grigoryan, S. V.; Mayorova, Ye. A.; Ruzumovskiy, Na. K.; Tulin, V. N.;
Yanishevskiy, Ye. M.; comp.

Use of diffusion aureoles of uranium and associated elements in prospecting and
surveying for hydrothermal uranium deposits; methodologic handbook (Izpol'so-
vaniye oreolov rasseyaniya urana i elementov-sputnikov pri poiskakh i razvedke
gidrotermal'nykh uranovykh mestorozhdeniy; metodicheskoye rukovodstvo) Moscow,
Izd-vo "Nedra", 1964. 194 p. illus., biblio., append. 2350 copies printed.
(At head of title: Gosudarstvennyy geologicheskiy komitet SSSR). Managing
editor: for the publishing house F. N. Chumakova; Technical editor: T. M.
Shmakova; Proofreader: A. A. Sivakova

TOPIC TAGS: geochemical prospecting, hydrothermal uranium deposit, primary
uranium diffusion aureole, radiometric anomaly, secondary uranium diffusion
aureole, uranium ore deposit

PURPOSE AND COVERAGE: The purpose of this handbook is to describe the laws govern-
ing the distribution of uranium and associated elements in the indigenous rocks

Card 1/3

UDC: 553.495:552.142

AU5002725

around hydrothermal uranium-ore bodies and in the river deposits above them; to demonstrate the possibility, the role, and the place of geochemical methods in solving such problems; and to describe the results of work on the development of primary and secondary diffusion aureoles of uranium and its associated elements. In addition to their own work, the authors used data from A. G. Vetrov, N. A. Voroshilov, V. S. Golunsov, O. D. Gorbunov, M. Ya. Bar, V. M. Konstantinov, M. V. Kutenkov, L. T. Mishin, Ye. A. Sizov, and others. Most of the spectral and luminescent analyses were performed by I. F. Davydova, Yu. T. Donets, B. M. Yeloyev, E. V. Mozolevskaya, and R. V. Timofeyeva.

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ROCK EXPLOITATION

No. 5

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Ch. V. Utilization of associated elements in evaluating radiometric anomalies and
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SUB CODE: 08 /SUBM DATE: 09Jul64 /SOV REF:094 /OTH REF:011

Card 3/3

SOCHEVANOV, N.N.; KABLUKOV, A.D.; BARANOV, E.N.; BOGOLYUBOV, A.N.;
VERTEPOV, G.I.; GRIGORYAN, S.V.; MAYOROVA, Ye.A.;
RAZUMOVSKIY, N.K.; TULIN, V.N.; YANISHEVSKIY, Ye.M.;
SOLOVOV, A.P., red.

[Using dispersion halos and accompanying elements in
prospecting for hydrothermal uranium deposits; methodological
handbook] Ispol'zovanie oreolov rasseiania urana i elementov-
sputnikov pri poiskakh i razvedke gidrotermal'nykh uranovykh
mestorozhdenii; metodicheskoe rukovodstvo. Moskva, Nedra,
1964. 194 p.
(MIRA 17:9)

1. Russia (1923- U.S.S.R.) Geologicheskiy komitet.

E.YOROVA, Ye.A.; TULIN, V.N.

Method for lithogeochical prospecting in the semi-arid zone of Kazakhstan. Razved. i okh. neft 30 no.7:57-60 Ju '64.

(MIRA 17:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut razvedochnoy geofiziki.

TULIN V. S.

PA 49T77

USSR/Petroleum - Well Drilling
Petroleum Industry Jan 1947

"Moment of Cyration in the Drilling of Petroleum
Wells," V. S. Tulin, 3½ pp

"Energeticheskiy Byull" No 1

Most widely used method for drilling is by means of rotary drill. In this case, however, if too much pressure is applied to the bit the bore is liable to diverge from the vertical and go off at uncontrollable angle. Therefore, author shows advantages of using low bit pressure and suggests several methods to secure this.

LG

49T77

TULIN, V. S.

PA 16T73

USSR/Drilling Machinery
Tools, Electric

May 1947

"Electric Drilling Equipment - 1947 Models" V. S.
Tulin, 8 pp.

"Energeticheskiy Byulleten'" No 5

Discusses technical improvements made in high
voltage switchboard, drill transformer of the TB -
300 type, electric drill motor, electric pump
motor, drill station, controller, feed regulator,
control panel, control wheel.

16T73

TULIN, V.S., inshener.

Electric drive in mining in the U.S.S.R. for thirty years. Vest.elektroprom,
18 no.11:25-28 N '47.
(MIRA 6:12)

1. Proyektno-vosstanovitel'nyy trest MEP.
(Electricity in mining)

TULIN, V. S.

TULIN, V. S. I KULIZADE, K. N.

29041 Osnoviye zadachi teorii i praktiki elektroprivoda v neftyanoy promyshlennosti. Izvestiya Akad. nauk. Azerbaydzh. SSR, 1949, № 8, S. 7-17— Rezyume na azerbaydzh. yaz.

SO: Letopisi' Zhurnal'nykh Statey, Vol. 39, Moskva, 1949

1. TULIN, V. S.
2. USSR (600)
4. Mine Hoisting
7. Remarks to A. N. Golubentsev's article "Increasing the efficiency of hoisting machinery and some problems of the theory of mine hoisting." (Ugol' 52, no. 11). Reviewed by V. S. Tulin. Ugol' 27 no. 12, 1952.
9. Monthly List of Russian Accessions, Library of Congress, March 1953, Unclassified.

TULIN, V.S., glavnyy inzhener tresta.

ASU-11 synchronizers. Elek. sta. 25 no. 6:59 Je '54. (MIRA 7:?)
(Electric machinery)

Subject : USSR/Electricity AID P - 2943
Card 1/1 Pub. 27 - 8/15
Author : Tulin, V. S., Eng.
Title : Contemporary tendencies in using electric drives in
the mining industry
Periodical : Elektrichestvo, 8, 57-62, Ag 1955
Abstract : The author presents a review of electric drives used
in the mining industry. He discusses in detail the
technical trends in that field in coal, ore and pe-
troleum mining. He presents the various types of
drives with their technical data in tabulated form.
Four tables, 3 photographs.
Institution : Central Design Bureau of the Ministry of the Ele-
ctrotechnical Industry
Submitted : My 9, 1955

FILIN, N.M.; TULIN, V.S.; CHULIKIN, M.G.; GOLOVAN, A.T.; PETROV, I.I.;
MOROZOV, D.P.; VESHENEVSKIY, S.N.

Engineer N.A.Tishchenko. Elektrichesstvo no.3:89 Mr '56.
(Tishchenko, Nikolai Afanas'evich, 1906-) (MIRA 9:6)

TULIN, V. S.

TISHCHENKO, N.A., inzh.; TULIN, V.S., inzh.

Development of electric drives during the past 40 years in the
Soviet Union. Elektrichestvo no.11:16-24 N '57. (MIRA 10:10)

1.Tsentral'noye konstruktorskoye byuro "Elektroprivod" (for Ti-
shchenko). 2.Gosplan SSSR (for Tulin).
(Electric driving)

KULEBAKIN, V.S.; LARIONOV, A.N.; CHILIKIN, M.G.; GOLOVAN, A.T.;
MOROZOV, D.P.; KURBATOVA, N.S.; KORITSKIY, A.V.; VESHENEVSKIY,
S.N.; TISHCHENKO, N.A.; TULIN, V.S.

Doctor of Technical Sciences I.I. Petrov. Elektrichestvo no.12:
83 D '57.
(Petrov, Ivan Ivanovich, 1907-)
(MIRA 10:12)

IVANOV, Anatliy Aleksandrovich; TULIN, V.S., doktor tekhn. nauk,
retsenzent; BLAZHKEVICH, A.T., doktor tekhn. nauk,
retsenzent

[Theory of automatic control and regulation] Teoriia avto-
maticeskogo upravleniya i regulirovaniia. Moskva, Izd-vo
"Nedra," 1964. 328 p.
(MIRA 17:8)

TULIN, V.S.

AUTHOR: N.M.

90-58-7-8/8

TITLE: All-Union Scientific and Technical Conference on the Electrical Equipment in Buildings and Outside Installations Liable to Explosions (Vsesoyuznoye nauchno-tehnicheskoye soveshchaniye po elektrooborudovaniyu vseyvoopasnykh pomeshcheniye i naruzhnykh ustanovok)

PERIODICAL: Energeticheskiy Byulleten', 1958, Nr 7, pp 29-33 (USSR)

ABSTRACT: The conference was held from 14-19 April, 1958 in Stalino and was convened by the Gosplan SSSR (State Planning, USSR) jointly with the Nauchno-tehnicheskoye obshchestvo energeticheskoy promyshlennosti (Scientific and Technical Society of the Power Industry), the Moskovskiy dom nauchno-tehnicheskoy propagandy im. F.E. Dzerzhinskogo (Moscow House of Scientific and Technical Propaganda imeni F.E. Dzerzhinskogo), Gosudarstvennaya inspeksiya po promyshlennoy energetike i enerгонадзора MES (State Inspection of Industrial Power and Power Supervision of the MES) and Institut Gipronisolektroshakht. A total of 590 people took part in the conference and 36 reports were read including: V.S. Tulin, "State and 1959-1965 Development Plan for Research Work, Construction Projects and Production of Explosion-Proof Electrical Equipment and the Problems of

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90-58-7-8/8

All-Union Scientific and Technical Conference on the Electrical Equipment
in Buildings and Outside Installations Liable to Explosions

Co-ordinating this Work"; V.Ye.Uleshchenko, Ya.M.Bol'sham,
I.I. Rakovich "The Requirements in Electrical Equipment for
Buildings Liable to Explosions"; representative of the Plants
KHEMZ, Elektrosila and imeni Kalinin "Designing Single Series
of Hermetic Electric Motors"; P.F. Kovalev, "The Use of Elec-
tric Power in Gas and Dust Infested Buildings, and the Plan-
ning of Common Rules for Preparing Electrical Equipment for
Installations Liable to Explosions"; A.F. Pankrat'yev "Elec-
tric Motors for Buildings Liable to Explosions, According
to Foreign Data"; P.A. Kolodochka, "Transformer Sub-stations
Liable to Explosions"; N.N. Yudin, "Low Voltage Apparatus for
Mines and Factory Installations Liable to Explosions"; A.S.
Tsibarov, "High Tension Compartments for Buildings Liable to
Explosions"; L.A. Sal'tsevich and A.S. Zusman, "Electric Light-
ing Equipment for Buildings Liable to Explosions". The case
for explosion-proof electrical equipment in the oil and gas
industries was put forth by: V.Ye.Obrenskiy (Novokuybyshev
Oil Refinery), Ye.A. Venetsianov (Tsentronelektromontazh),
N.S. Movsesov (Glavelektromontazh), B.A. Delibash (Tsentr-

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90-58-7-8/8

All-Union Scientific and Technical Conference on the Electrical Equipment
in Buildings and Outside Installations Liable to Explosions

elektromontazh), M.F. Shidlovskiy (Giproneftezavod), V.V. Peyve (Giproneftezavod), P.I. Polikarpov (Syzran' Oil Refinery), A.Ya. Berg (Kuybyshev Oil Refinery) and A.A. Blekhman (Lengi-progaz). The work of investigatory organizations such as MakNII, VosNII, TsNII UPO and Giproniselektroshakht was summed up and the conference agreed that the electrical industry had failed in developing better explosion-proof equipment. Specific defects in machinery and installations, and also some improvements, are mentioned. The article lists proposals agreed on by the conference and intended for the guidance of plants of the electrical industry and research and experimental organizations during the 1959-1965 period.

Card 3/3 1. Electrical equipment—Conference 2. Electrical equipment
—Hazards 3. Electrical equipment—Safety measures

USCOMM-DC-55, 134

Фундаменталне об'єднанням зорганізованим по атомістичній промисловості та енергетиці

наук. №1. Москва, 1959

Електрифіковані автоматизовані промислові системи управління та промислові
(електричні приводи та автоматика в промислових системах) Трансакадемії
Фундаментальні Наукові Конференції, 1960. 470 р. 11,000 copies printed.

General Ed.: I.I. Putorov, A.-I. Sviridov, and M.G. Chiklis; Eds.: I.I. Sol, and
L.P. Slagov; Tech. Eds.: K.P. Vavrin, and G.F. Lashkov.

PURPOSE. The collection of reports is intended for the scientific and technical
personnel of scientific research institutes, plants and schools of higher
education.

CONTENTS. The book is a collection of reports submitted by scientific workers at
plants, scientific institutes and schools of higher education at the Third
All-Union Conference on the Automation of Industrial Processes in Machines
and Buildings and Automatic Electric Drives in Industry held in Moscow on
May 12-16, 1959. The Conference was called by the Academy of Sciences USSR, the
Central Scientific Planning Commission (CSC), the USSR Council of Commissars
and the All-Union Institute of Machine-Building (State Committee on Air Construction and
Machine Building) and the National Committee USSR po атомістичній промисловості
(USSR National Committee on Atomic Energy) and organized by the
Scientific-Technological Committee on automation of powerplants/electroplants (Societies
of Engineers), the VNIIT, the IAT (Institute of Automation and Telemechanics)
and the Institute of Mathematics of CSC, and the Institute po tehnicheskoi mehanizatsii
(Institute of the Mechanization of Science) of Institute of Physics of Academy of Sciences USSR).
It was the purpose of the Editorial Board to review the reports in a way which
would ensure a relatively balanced presentation of theoretical and practical
problems relating to electric drives and automatic control of industrial machines
and their auxiliary equipment. The book also contains articles on elec-
trical machinery and means of automation. Considerable attention is paid to non-
linear applications, including systems with semiconductor devices,
systems of linear and nonlinear automatic regulation and control systems.
Reports already published in journals or official publications have been considered
and abbreviated those which have appeared in volume V of IUP transactions
are mentioned. References to early issues of the papers
are omitted.

PART II. GENERAL PUBLICATIONS CONCERNING THE FIELD AND PRINCIPLE OF ELECTRIC DRIVES AND AUTOMATION OF CONTROL

- | | |
|--|--|
| Bogdan, I.M., Candidate of Technical Sciences, and A.N. Kostenko and V.I.O.
Electrical Engineer, Autoclaved Graphite Controlled DC Electric Drive Co.
High-Tower Boiling Reactivity at the "Sibugazneftegaz" and "Turkmenugaz" Mines 333 | |
| Kharchenko, A.I., Candidate of Technical Sciences. Automated Induction Drive of a Mine Ship Boil-
ing Installation Controlled by Means of a Liquid Rheostat 338 | |
| Makarov, I.A., Candidate of Technical Sciences. Automation of Boiling Cage
Installations by Means of Frequency Regulation of Speed 341 | |
| Sokol'nikov, A.S., Engineer. Magnetic Clutches in Automated Mine Boilings 342 | |
| Ivanov, A.I., Doctoral Candidate of Technical Sciences. Automation of Mine
Boilings and Prospects of Its Development 344 | |
| Borodin, N.G., Engineer. Electric Equipment of a Deep Dredge With a 600
Kilowatt Capacity 345 | |
| Khromov, I.A., Engineer, M.R. Savchenko, Candidate of Technical Sciences, and
G.M. Konzher, I.S. Kuchuk, and V.S. Shul'pin, Engineers. Results of Intro-
duction and Technical Operation of Electric Drive Systems for the Elektrostro-
iia Sverdlovsk, Dzheliovo, Industrial Buildings and Structures 351 | |
| Rashkov, A.V., Professor, Doctor of Technical Sciences, T.I. Gorshenina,
Candidate of Technical Sciences, Yu.G. Karpov, Doctor, Candidate of Tech-
nical Sciences, and A.I. Zitov. Guidelines on Technical Sciences. Automatic
Control Systems of the Main Electric Drive of Horizontal and Vertical Ship
Hoisting Equipment 355 | |
| Dobrovolskiy, A.Z., and M.G. Novikova, Engineers. New Electric Drive Systems for
Drilling Oil and Gas Wells 361 | |
| Kolosov, Yu.M., and N.M. Borodin, Candidates of Technical Sciences. Auto-
matic Voltage Regulation of Synchronous Electric Motor Terminal During Oil
Well Drilling 363 | |
| Kharchenko, I.A., Engineer, I.I. Kuznetsov, Candidate of Technical Sciences and
Radio-Electronic Engineer. Electronically Controlled 4,500-kw Induction Drive
for the Starropol-Moscow Gas Pipeline 367 | |
| Stepanov, S.A., Doctor of Technical Sciences. Transient Electromechanical
Processes in a Diesel-Generator-Generator-Induction Motor System 371 | |

L 16458-66

ACC NR: AP6009075

SOURCE CODE: UR/0105/65/000/004/0094/0094

AUTHOR: Alatortsev, S. A.; Blazhkin, A. T.; Gladilin, L. V.; Ivanov, A. A.;
Leybov, R. M.; Ozernyy, M. I.; Pirotskiy, P. P.; Rangayish, A. A.; Rozenman, Ye. A.;
Rys'yev, K. V.; Tulin, V. S.; Trop, A. Ya.

ORG: none

33

TITLE: Professor S. A. Volotkovskiy

B

SOURCE: Elektrichestvo, no. 4, 1965, 94

TOPIC TAGS: electric engineering personnel, mining engineering

ABSTRACT: In this salute to Prof. Volotkovskiy on his 60th birthday, the dozen signers of the article state that he, as head of the department of electrification of mining operations and industrial enterprises of the Dnepropetrovsk mining institute, has been a leader in the electrification and modernization of mining processes. In the field since 1920, Sorgay Andronikovich completed his studies in the Dnepropetrovsk mining institute. He worked in the institute from 1930-1941. He became a doctor of technical sciences and professor in 1950, while at the Sverdlovsk mining institute. He returned to the Dnepropetrovsk mining institute in 1959. A member of the party since 1927, he has published over 130 works. Orig. art. has: 1 figure.

[JPRS]

SUB CODE: 08, 09 / SUBM DATE: none
Card 171 mc

UDC: 622:621.311.002,5

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"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001757410018-7

TULIN, V.S., ~~private~~

education in mining engineering. Ugol' 40 no.9:1-3 S '65.

(MIRA 18:10)

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001757410018-7"

KRAUS, E.G., inzh.; TULIN, V.S., prof. (Moskva)

Electric drives and automatic control in mining. Elektrichestvo
no.8:86-91 Ag '63. (MIRA 16:10)

1. Karagandinskiy gosudarstvennyy inzhenerno-proyektnyy institut
po proyektirovaniyu shakhtnogo stroitel'stva Karagandinskogo
ugol'nogo basseyna (for Kraus).

TULIN, V.S., prof.; PANKRAT'YEV, A.F., inzh.

Concerning P.F. Kovalev's article. Vest. elektroprom. 34 no.8:
60-61 Ag '63. (MIRA 16:9)
(Electric apparatus and appliances—Standards)

YASNYY, Vadim Kononovich, inzh.; PANKRAT'YEV, Aleksandr Fedorovich,
TULIN, V.S., doktor tekhn. nauk, prof., glav. red. toma;
KOLESNIKOVA, V.G., red.; LEVIN, L.M., red.; PROSTIN, V.F.,
red.; TEREKHOV, S.D., red.; FOKINA, I.V., red.; OSVAL'D,
E.Ya., red.izd-va; SABITOV, A., tekhn. red.

[The coal industry of capitalist countries] Ugol'naia pro-
myshlennost' kapitalisticheskikh stran. Moskva, Gosgortekh-
izdat. Vol.4. Pt.1.[Electric supply, communication, signaliza-
tion and lighting] Elektrosnabzhenie, sviaz', signalizatsiia
i osveshchenie. 1963. 314 p. (MIRA 16:10)
(Electricity in mining) (Mine communications)

TULIN, V.S., prof.

Basic trends in the use of a multirope drive on hoisting cages
to raise the technical level of mine hoisting units. Izv. vys.
ucheb. zav.; gor. zhur. 5 no.3:143-147 '62. (MIRA 15:7)

1. Moskovskiy gornyy institut. Rekomendovana kafedroy
avtomatizatsii proizvodstvennykh protsessov Moskovskogo gornogo
instituta.

(Mine hoisting)

TULIN, V.S., prof.

Choice of a system of electric driving for multirope mine
hoists. Izv. vys. ucheb. zav.; gor. zhur. 5 no.1:151-158
'62. (MIRA 15:4)

I. Moskovskij gornyy institut. Rekomendovana kafedroy
avtomatizatsii proizvodstvennykh protsessov Sverdlovskogo
gornogo instituta.

(Mine hoisting--Electric driving)

TULIN, V.S., prof. (Moskva)

Electric drives and automatic control in the mining industry.
Elektrичество no.3:1-5 Mr '62. (MIRA 15:2)
(Electricity in mining)
(Electric driving)

TULIN, V.S.

Theoretical principles for designing a normal row of automatically controlled electric drives of multicable mine hoists. Elektrichestvo no.10:12-19 0 '61.
(MIRA 14:10)

1. Moskovskiy gornyy institut.
(Electric driving) (Electricity in mining)
(Hoisting machinery)

TULIN, V.S., prof.

Theoretical bases for designing a standard series of multirope mine hoists. Izv. vys. ucheb. zav.: gor. zhur. no.11:138-150 '61.
(MIRA 15:1)

1. Moskovskiy gornyy institut imeni I.V.Stalina.
(Mine hoisting)

KHORUNZHIY, V.A., red.; RIBAS, Yu.M., red.; BORISEVICH, Z.S., red.;
VERTYACHIKH, V.G., red.; KOST'YEV, N.K., red.; MOVSESOV, N.S.,
red.; ZHIGULIN, Yu.V., red.; RAKOVICH, I.I., red.; RUVINSKIY,
V.A., red.; TULIN, V.S., red.; FETISOV, P.A., red.; FILIMONOV,
P.V., red.; IGLITSYN, I.L., red.; LARIONOV, G.Ye., tekhn.red.

[Rules for the manufacture of explosion-proof electric equipment]
Pravila izgotovleniya vzryvozashchishchennogo elektrooborudovaniya.
Moskva, Gos.energ.izd-vo, 1960. 54 p. (MIRA 13:11)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po avtoma-
tizatsii i mashinostroyeniyu.
(Electric apparatus and appliances)

TULIN, Vyacheslav Semenovich; ANTONOV, B.I., ved. red.

[Electric drives and the automatic control of
multiplecable mine hoisting machines] Elektroprivod
i avtomatika mnogokanalnykh rudnichnykh podzemnykh
mashin. Moskva, Nedra, 1964. 193 p.
(MIRA 18:2)

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[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Y. M. Dzitko, N. M. Ilychayk, N. M. Klyavchenko, N. D. [Mitvileava, N. D.];
G. G. Tulinets, G. G. [Tulinets, H. H.]

Effect of X-ray and nuclear irradiation on *Bac. perfringens*.
Report No. 1. Changes in the morphology and cultural characteristics
of type A and B *Bac. perfringens* produced by the action of gamma-
neutron Irradiation. *Mikrobiol. zhur.*, 25 no.1:10-16 '63.

(MIRA 17:5)

I. Institut mikrobiologii AN UkrSSR.

LAK, G.Ts., TULINA, M.P., redaktor; MOLODTSOVA, N.G., tekhnicheskiy
redaktor.

[Diatomaceae quaternary deposits of western Karelia.] Diatomovye
chetvertichnykh otlozhenii Zapadnoi Karelii. Moskva, Izd-vo
Akademii nauk SSSR, 1954. 12 p. plates. (MIRA 8:3)
(Karelia—Diatoms, Fossil)

GAMBURTSEV, G.A., akademik [deceased]; VEYTSMAN, P.S., TULINA, Yu.V.

Structure of the earth's crust in the northern Tien Shan region,
as shown by seismic depth sounding. Dokl. AN SSSR 105 no.1:
83-86 N '55. (MLRA 9:3)

(Tien shan--Seismometry)

GAMBURTSEV, G.A. [deceased]; VEYTSMAN, P.S.; DAVYDOVA, N.I.; TULLUA, Yu.V.

Plutonic seismic sounding of the Earth's crust in northern Tien
Shan. Biul. Sov. po seism. no.3:11:23 '57. (MIRA 11:5)
(Tien Shan--Seismic waves)

TULINA, Yu. V.

AUTHORS: Kosinskaya, I. P. and Tulina, Yu. V.

49-7-3/14

TITLE: Experience gained in using the method of deep seismic probing for studying the structure of the Earth's crust in certain regions of Western Turkmenia. (Opyt primeneniya metoda glubinnogo seysmicheskogo zondirovaniya dlya izucheniya stroyeniya zemnoy kory nekotorykh rayonov zapadnoy Turkmenii).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1957, No.7, pp. 874-894 + 4 plates. (USSR)

ABSTRACT: Special studies were made in 1952 of the structure with the depth of some regions of Western Turkmenia in conjunction with detailed investigation of the seismicity of Turkmenia. For this purpose a method of deep seismic sounding was used which was proposed by G. A. Gamburtsev and developed in the Geophysics Institute, Ac.Sc. U.S.S.R. (Geofizicheskiy Institut AN SSSR) under his leadership (Refs.1 and 2). The fundamental task of these investigations was to clarify the character of the deep boundaries of division in the region of grouping of the main geological structures which occur in the region under consideration. These structures include the mountain ridges Kopet-Dag, Bolshoy Balkhan, the Predkopetdag斯基 bend and the Trans-Caspian lowland. Under "deep boundaries" the authors understand boundaries located

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49-7-3/14

Experience gained in using the method of deep seismic probing for studying the structure of the Earth's crust in certain regions of Western Turkmenia. (Cont.)

at depths between 5 and several tens of km, the investigation of which is accessible by ordinary geological and geophysical prospecting methods. The work was carried out by the Geophysics Institute, Ac.Sc., U.S.S.R. and the Central Asian Trust (GLAVNEFTGEOFIZIKA) of the Ministry of the Oil Industry. It was assumed that in investigating the deep structure of the region certain problems will be solved relating to increasing the depth of possible seismic prospecting under the conditions pertaining in Turkmenia. The field observations as well as the interpretation of the results were carried out under the scientific guidance of G. A. Gamburtsev. In addition to the authors, a number of people from the Geophysics Institute participated in the field work. The technical chief was N. Ye. Fedoseyenko, the field work was carried out under the supervision of M. A. Zayonchkovskiy, by E. I. Zelikman and S. A. Kulikov guided the work at the point of explosion. The chief engineer of SREDAZNEFTEGEOFIZIKA, Yu. N. Godin participated in commenting on the plans of the work and interpretation of the results. The basic results obtained are described in

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Experience gained in using the method of deep seismic probing for studying the structure of the Earth's crust in certain regions of Western Turkmenia. (Cont.)

this paper. The features are described of the seismic boundaries located at various depths and the corresponding strata of the paleozoic, granite, basalt and the subcrust layers. Schematic maps are given of the surfaces of the paleozoic stratum and of the thickness of the Earth's crust. The maximum thickness of the crust is in the Trans-Caspian Lowland (over 40 km), the minimum thickness (below 30 km) is at the Bolshoy Balkhan. The dimensions of the Earth's crust are compared with the depth of tremors of weak earthquakes recorded by means of high sensitivity stations KMIZ. It was found that the South Western regions of Turkmenia are favourable for recording distant explosions (100 to 250 km) which are applied for deep seismic sounding. Groups of waves were recorded which correspond to division boundaries within a wide range of depths, from prospected depths of 3 to 10 km to the depths of the basalt and the subcrust layers (20 to 45 km). It was found that by changing over to lower frequencies (10 to 20 c.p.s.) and utilising distant explosions it is possible to increase appreciably the depth of prospecting by the method of refracted waves. At

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distances of 30 to 80 km from the point of explosion it is possible to study division boundaries located at depths of 3 to 10 km; by means of deep seismic sounding methods it is possible to record distant explosions produced not only in water reservoirs but also in wells. The character of the recordings indicates the complex seismo-geological structure of South Western Turkmenia in the entire range of depths. For elucidating the character of the behaviour of deep horizons, it is necessary to take into consideration the influence of the seismic boundaries located above them. For this purpose it is advisable to combine deep seismic sounding with the correlation method of refracted waves, described by Gamburtsev et alii (Ref.16). Comparison of the recordings of P^* and P waves made in Turkmenia with those obtained in Tyan'-Shan (Refs.6 and 7) indicate that the kinematic and dynamic features of the groups of waves are similar in both regions. The groups consist of a large number of individual waves due apparently to the complex structure of the layers in the Earth's crust. Elucidation of the nature of the successive waves in the groups is one

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of the fundamental tasks of developing further the method of deep seismic sounding. Four seismic boundaries were detected in Turkmenia, the least deep one is that of the surface of the paleozoic foundation; the deeper ones are those of the granite, basalt and subcrust layers respectively. The characteristics of the individual boundaries are described in some detail. Comparison of the sections of deep seismological sounding with the depth of the foci of weak earth tremors recorded by KMK3 stations indicate that the tremors of the fundamental groups of earthquakes are concentrated in the granite, in the basalt layer and in the lower boundary of this layer.

There are 20 figures, 2 tables and 18 references, 16 of which are Slavic.

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SUBMITTED: December 8, 1956.

ASSOCIATION: Institute of Physics of the Earth, Ac.Sc., U.S.S.R.
(Akademiya Nauk SSSR Institut Fiziki Zemli).

AVAILABLE: Library of Congress

ICL.RA, Vn. V.

TVALTVAZHE, G.K.; KOSMINSKAYA, I.P.; MURUSIDZE, G.Ya.; MIKHOTA, G.G.;
IOSHLIANI, M.S.; TULINA, Yu. I.

Results of studies of the surface of the crystalline foundation
of the western part of the Gori-Mukhrani depression by seismic
methods. Trudy Inst. geofiz. AN Gruz. SSR 16:135-161 '57.

(Georgia--Geology, Structural) (MIRA 11:6)
(Seismic waves)

SOV/49 -58-10-2/15

AUTHORS: Kosminskaya, I. P., Mikhota, G. G. and Tulina, Yu. V.

TITLE: The Structure of the Earth's Crust in the Pamir -Alay Zone
According to the Data of Deep Seismic Sounding (Stroyeniye
zemnoy kory v Pamiro-Alayskoy zone po dannym glubinnogo
seysmicheskogo zondirovaniya)

PERIODICAL: Izvestiya Akademii Nauk SSSR, seriya geofizicheskaya,
1958, Nr 10, pp 1162-1180 (and 2 plates) (USSR)

ABSTRACT: Work on deep seismic sounding in the Pamir -Alay Zone
was suggested by Academician G. A. Gamburtsev. It was
carried out under his direction and was a continuation of
geological and geophysical explorations which have recently
been carried out by the Geophysical Institute of the Academy
of Sciences of the USSR in seismically active regions of
Middle Asia in order to study the physics of earthquakes.
The work reported in this paper was carried out by an ex-
pedition which was directed by I. L. Nersesov and L. E.
Aronov. The geological structure of various parts of the
Pamir -Alay Zone has been studied previously and results

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were reported in Refs.2-11. As a result of the present work it was established that the structure of the earth's crust in mountain regions may be investigated by deep seismic sounding.. General features of the structure of the earth's crust in some regions of Southern Tian Shan' and Northern Pamir were obtained. The Mohorovičić surface and the surface of the basalt layer in this region have similar trends and extend from North-East to South-West. The depth of the basalt layer is between 15 and 40 km and the depth of the Mohorovičić surface is between 45 and 70 km. The following regularities have been deduced from profiles of the earth's crust in the Pamir-Alay Zone:

- a) in the transition from platform regions to mountain regions a considerable increase in the thickness of the earth's crust was observed within the range 30-70 km;
- b) in mountain regions plutonic boundaries have complex profiles with depressions or elevations of 15 km or more, and inclinations up to 10-12°;
- c) in mountain regions differences have been found in the structure of the earth's crust between Hercynian and Alpine

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foldings. Thus in Northern and Southern Tian Shan' the basalt layer has a large thickness while in the Northern Pamir the granite layer has a large thickness. A comparison of seismic data obtained during the above expedition with gravitational data for a number of regions in Middle Asia has shown that the character of the gravitational field is governed mainly by the form and the position of the Mohorovičić surface. The basalt layer is important in connection with the origin of anomalies. The maximum (in the USSR) negative anomaly was found in Northern Pamir (-450 mgal). There are 2 tables, 14 figures and 32 references, of which 29 are Soviet, 2 are English and 1 is German.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (Academy of Sciences of the USSR, Institute of Physics of the Earth)

SUBMITTED: August 26, 1957.

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AVER'YANOV, A.G.; VAYTSMAN, P.S.; GAL'DERIN, Ye.I.; ZVEREV, S.M.;
ZAYONCHKOVSKIY, M.A.; KOSMINSKAYA, I.P.; KRAKSHINA, R.M.;
MIKIOTA, G.G.; TULINA, Yu.V.

Deep seismic sounding in the transition zone between the
continent of Asia and the Pacific Ocean during the International
Geophysical Year. Izv. AN SSSR. Ser. geofiz. no. 2:169-184 F '61.
(MIRA 14:2)

1. Institut fiziki Zemli AN SSSR.
(Soviet Far East—Seismometry)
(Earth—Surface)

S/049/61/000/005/012/013
D207/D306

AUTHOR: Tulina, Yu. V.

TITLE: Conference on deep seismic sounding

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. 5, 1961, 748-750

TEXT: A conference on deep seismic sounding (DSS) of the earth's crust was held at the Institut fiziki zemli AN SSSR (Institute of Physics of the Earth, AS USSR) [Abstractor's note: Subsequently abbreviated to IPE] between November 14 - 19, 1960. The Conference was convened by the IPE, by the Sovet razvedochnoy geofiziki pri Prezidiume AN SSSR (Council for Prospecting Geophysics of the Presidium of AS USSR), and by the Geofizicheskiy otdel i Vsesonauznyy institut geofizicheskikh metodov razvedki Ministerstva geologii i okhrany nedor SSSR (Geophysics Department and All-Union Institute for Geophysical Prospecting Methods, Ministry of Geology and Protection of Mineral Resources of the USSR). There were 190 participants representing 48 organizations, which included 21 ✓

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Conference on deep seismic ...

where work on deep seismic sounding (DSS) is carried out. Thirty-six papers were presented at the Conference. The introductory paper dealing with the importance of DSS was presented by Corresponding Member of AS USSR, V.V. Belousov. The papers presented at the Conference can be divided into three groups, dealing with the following subjects: 1) Field observations and interpretation of primary DSS data; 2) nature of waves coming from great depths, as recorded in various parts of the Soviet Union, and their physical interpretation; 3) improvement of DSS apparatus. The first group included the following: A collective paper by workers at the IPE and at the VNIIGeofiziki (All-Union Scientific Research Institute of Geophysics) which dealt with the observational techniques and which was presented by Ye. I. Gal'perin; a paper of Ye. D. Tagay and N. P. Ivanova on recording waves reflected from deep-lying discontinuities; a paper of V. Z. Ryaboy and G. G. Shteynberg on the "RNP method" in its laboratory modification. The second group included papers on: Applications of DSS methods to various seismogeological structures which can be found in the USSR (I. V. Litvinenko, I. V. Pomerantseva, A.V. Yegorkin, K. Ye. Fomenko, A. A.

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Popov, B. S. and I. S. Vol'vovskiy, P. S. Veytsman, B. D. Trebu-kova, Yu. P. Neprochnov, R. M. Krakshina, T. L. Vasi'yeva, I. I. Davydova, I. P. Kosminskaya); extensive DSS data on waves in con-tinental, oceanic and intermediate types of crustal structure (I. P. Kosminskaya); extensive DSS data on waves from different layers of the earth's crust (B. S. and I. I. Vol'vovskiy, I. V. Pomerantseva, I. V. Margot'yeva, A.V. Yegorkin); theoretical cal-culations dealing with DSS interpretation (A. S. Alekseyev); ana-lysis of experimental data and calculations based on several mo-dels (A. M. Yepinat'yeva, A. G. Aver'yanov); crustal composition and geophysical problems which can be solved by means of DSS (Yu. N. Godin, who suggested that wave velocities should increase with depth and was supported in this by I. A. Rezanov). Yu. N. Godin was of the opinion that it is too early to use DSS methods on a wide scale. This viewpoint was criticized by B. B. Tal'virskiy, B. A. Petrushevskaya, I. P. Kosminskaya, V. V. Fedynskiy and oth-ers who stressed that DSS methods are ready for practical use, that DSS is also of theoretical importance and that both very de-tailed and less detailed large-scale DSS observations are needed ✓

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(this last question was also dealt with by S. I. Subbotin, A. T. Donabedov, I. K. Tuyezov and others). The second group of papers included also work on the nature of waves, seismic discontinuities and crustal structure (A. M. Yepinat'yeva, Ye. M. Rudich, G. N. Pariyskaya, I. V. Litvinenko), on physical characteristics of the earth's crust under various conditions (M. P. Volarovich, F. M. Lyakhovitskiy), on theoretical investigations and calculations (A. S. Alekseyev, A. G. Aver'yanov), on comparison of seismic and gravimetric data on the crustal structure (R. M. Demenitskaya, N. K. Bulin, V. I. Shrayzman), on observational techniques (M. A. Zayonchkovskiy), and on analysis of seismograms of earthquakes and strong explosions (S. I. Masarskiy, N. K. Bulin, Ye. M. Butovskaya, D. D. Sultanov). Unfortunately there were only a few papers in the third group dealing with the very urgent problem of improvement of DSS apparatus. Faults of DSS instruments and methods for improvement were discussed by A. N. Mozzhenko. S. I. Ivanov reported that a radioseismic station was constructed at VITR but its serious production has been postponed several times. Use of radio buoys in the Black Sea was reported by Yu. P. Nep-

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rochnov and G. N. Lunarskiy. V. S. Voyutskiy proposed an "accumulation method" as a means of improving the sensitivity of DSS instruments working on dry land. Several papers deal with general problems which are of interest in other geophysical prospecting methods: Dependence of the intensity and of the frequency spectrum of waves on the weight of an explosive charge (G. G. Mikhota), low-frequency seismic prospecting (L. L. Khudzinskiy), combination of several geophysical methods for the study of the crustal structure (R. M. Demenitskaya). The Conference recommended: 1) Continuation and extension of DSS work on dry land and at sea for determining the total thickness and the structure of the earth's crust as well as the thickness of the sedimentary layer; 2) improvement of experimental DSS techniques during the next 2 - 3 years by intensive work at the research institutes; 3) continuation and extension of work on dynamic characteristics of DSS waves, and on interpreting hodographs of refracted and reflected waves; 4) development of new DSS apparatus using the latest developments in electronic engineering and instrument construction; 5) collation, in the next 3 years, of all DSS data obtained during the last ten

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years in the Soviet Union; 6) publication of the proceedings of the Conference which was the first of this type in the USSR.

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